

1 1. An electric heating/warming element comprising:
2 a bladder of a water-resistant, vapor-permeable polymeric material;
3 an electrical heating/warming circuit extending within said bladder, wherein
4 said electrical heating/warming circuit generates heat when attached to a source of electrical
5 power.

1 2. The electric heating/warming element of claim 1, wherein the electrical
2 heating/warming circuit comprises:
3 a fabric body,
4 incorporated into said fabric body, in the form of conductive yarn, a plurality
5 of spaced apart electrical resistance heating elements extending generally between opposite
6 edge regions of said fabric body, and
7 electrical conductor elements extending generally along said opposite edge
8 regions of said fabric body and adapted to connect said plurality of spaced apart electrical
9 resistance heating elements to the source of electrical power.

1 3. The electric heating/warming element of claim 2, wherein said electrical conductor
2 elements are adapted for connecting said plurality of spaced-apart electrical resistance
3 heating elements to a power source of alternating current.

1 4. The electric heating/warming element of claim 2, wherein said electrical conductor
2 elements are adapted for connecting said plurality of spaced-apart electrical resistance
3 heating elements to a power source of direct current.

1 5. The electric heating/warming element of claim 4, wherein said power source of
2 direct current comprises a battery.

1 6. The electric heating/warming element of claim 2, wherein a series of at least three
2 electrical resistance heating elements of said plurality of electrical resistance heating
3 elements are symmetrically spaced.

1 7. The electric heating/warming element of claim 6, wherein a series of at least three
2 electrical resistance heating elements of said plurality of electrical resistance heating
3 elements are asymmetrically spaced.

1 8. The electric heating/warming element of claim 2, wherein a series of at least three
2 electrical resistance heating elements of said plurality of electrical resistance heating
3 elements are asymmetrically spaced.

1 9. The electric heating/warming element of claim 2, wherein said fabric body
2 comprises a knitted body.

1 10. The electric heating/warming element of claim 9, wherein said fabric body
2 comprises a reverse plaited circular knitted body.

1 11. The electric heating/warming element of claim 10, wherein said fabric body has a
2 technical face formed by a stitch yarn and a technical back formed by a loop yarn.

1 12. The electric heating/warming element of claim 2, wherein said fabric body
2 comprises a woven body.

1 13. The electric heating/warming element of claim 1, wherein said bladder comprises
2 a hydrophilic material.

1 14. The electric heating/warming element of claim 1, wherein said bladder comprises
2 hydrophobic material.

1 15. The electric heating/warming element of claim 1 incorporated into one of an
2 article of clothing, a heating pad, a blanket, a piece of sports equipment, a medical device and
3 a textile home furnishing.

1 16. The electric heating/warming element of claim 1, wherein said bladder includes a
2 first and a second layer, each of which provides an inner surface of the bladder, the electrical
3 heating/warming circuit being associated with one of said inner surfaces.

1 17. The electric heating/warming element of claim 16, wherein said electrical
2 heating/warming circuit is printed upon one of said inner surfaces of said bladder.

1 18. The electric heating/warming element of claim 16, comprising a fabric layer
2 having an inner surface and an outer surface, wherein said first and said second layers of said
3 bladder comprise:

4 a barrier layer disposed at each of said inner and outer surface of said fabric
5 layer, said barrier layers each having an inner surface and an outer surface; and
6 said electrical heating/warming circuit in the form of a flexible film disposed
7 upon a said inner surface of a said barrier layer.

1 19. The electric heating/warming element of claim 1, wherein said electrical
2 heating/warming circuit comprises a die-cut sheet-form metalized layer attached to one of a
3 first and a second broad surface of a fabric body.

1 20. The electric heating/warming element of claim 1, further comprising a phase
2* change component associated with the bladder and including a phase change material
3 formulated to change phase in a temperature range of use of the heating/warming element, to
4 cyclically absorb and release latent heat in a manner capable of conserving use of the
5 electrical power source.